

14 Designing Future Research Projects in an Integrated Framework

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with contributions from

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Abstract

As a follow-up to the eight regional SPSP workshops in the summer of 2001, an initial international conference of the NCCR North-South was held in Grindelwald from 18–21 September 2001 to lay the groundwork for long-term mitigation research on major syndromes in urban and peri-urban, semi-arid and highland-lowland contexts. This important step was a necessary compromise between the needs enumerated in the regional syntheses and the potential capacity and competence of the participating institutions. The main result of the conference was a draft matrix showing where IPs are involved in the different JACS regions worldwide. In addition, topics of global relevance and scope were defined. While the draft matrix was developed during the conference, its refinement at the regional level took a further nine months. Based on this final matrix, IPs and their partners in each region defined research themes. In the last section of the present chapter, the final matrix of June 2002 is compared with the list of studies that were initiated in the following 12 months; i.e. until June 2003. The results show that all institutional members of the programme have sufficiently complied with the matrix, but that closer cooperation on the part of IPs in various JACS is still necessary. Most IPs have more than adequately covered the core scientific fields in the regions they chose to focus on. Finally, the NCCR North-South remains fully committed to strengthening mutual cooperation, not only through partnerships between Swiss and other research institutions, but also between research and other sectors, in order to further enhance added value through locally-rooted generalisations and direct local applications.

14.1 The first NCCR North-South conference

An initial international NCCR North-South conference was held in Grindelwald from 18–21 September 2001. It was the concluding event of the Syndrome Pre-Synthesis Project (SPSP) as well as the first General Assembly of the NCCR North-South programme (NCCR North-South, 2002). The conference provided an opportunity to create a further synthesis of regional experience gained during the SPSP workshops and enabled members of the global team to establish initial interdisciplinary and intercultural contacts. The greatest challenge of the meeting for participants, however, was exposure to the different theoretical and methodological concepts emanating from very different backgrounds and schools of thought. While some divergence in perception of concepts and approaches remained, participants signalled their desire to work towards identification and definition of common ground during the first phase of the NCCR North-South and – more importantly – to begin mitigation research in joint teams and working groups. Programme instruments such as the Scientific Forum, Transversal Topics, Global Overviews and JACS research have since made it possible to pursue this objective thoroughly and make progress towards the three overall goals of the NCCR North-South: research partnerships, capacity building and social empowerment.

As underlined in the conference proceedings (NCCR North-South, 2002), the overall goal of the Grindelwald conference was to lay the groundwork for long-term mitigation research on major syndromes in urban and peri-urban, semi-arid and highland-lowland contexts. The conference was organised for participants who had already taken part in the pre-synthesis workshops held in the eight regions worldwide that were defined as JACS. These participants met with a composite group of Swiss researchers from the different institutions involved in the SPSP and NCCR North-South projects. A total of 62 participants from 22 different countries and all JACS regions, representing more than 20 disciplines, attended the conference.

The three-day programme was divided into nine different sessions, including a field trip in the JACS Alps region. The initial sessions allowed participants to become mutually acquainted with the different JACS of the NCCR North-South. Presentations included brief introductions to the regions, a summary of core problems identified and weighted in selected syndrome contexts, a list of possible research themes, and conceptual issues identified as critical and requiring further discussion. The next sessions focused on the

syndrome approach as the programme's general conceptual framework. During the NCCR North-South General Assembly, conceptual aspects and the management structure were addressed; the most important issues were discussed further in working groups.

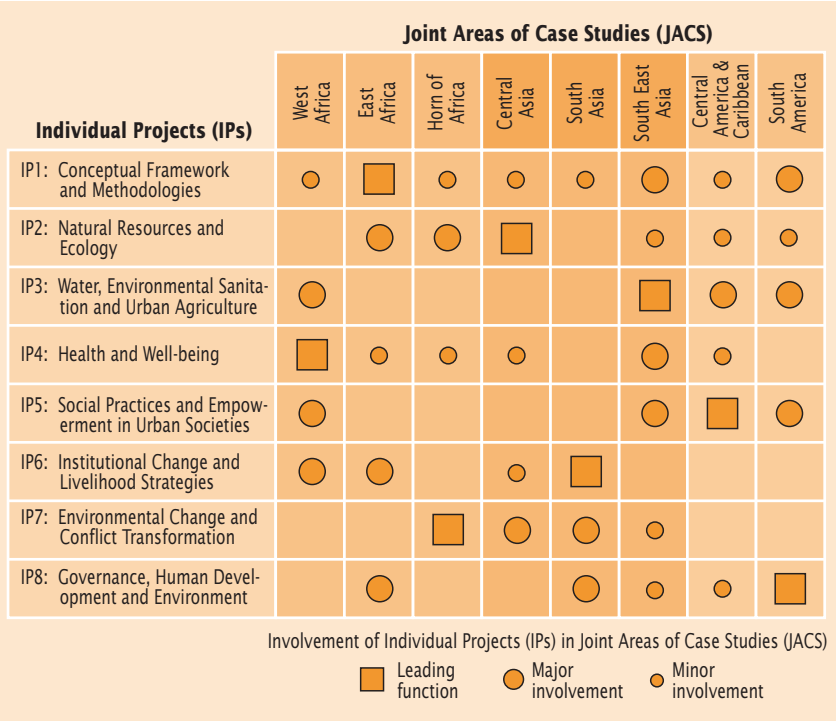
This was followed by sessions that focused on constructing a framework for further collaboration among JACS and IPs. In a preliminary step, the syndrome contexts identified by the different JACS were compared with the three major syndrome contexts originally proposed by the NCCR North-South. Two of the original contexts were adopted without change ("semi-arid" and "urban and peri-urban"), while the third was sub-divided into a "highland and mountain" and a "highland-lowland interactions" context. For some themes, definition as sub-contexts within the framework of the original proposal was not possible; instead, these themes will be dealt with as Transversal Topics. Two themes could not be integrated anywhere. The second step involved design of a matrix that correlated the major research themes identified by each JACS with the topical interests of the different IPs. The matrix designed in Grindelwald is an important tool for further communication between IPs and JACS (see Chapter 14.2).

Finally, the last session was devoted to discussion of follow-up activities and institutional and organisational matters with which the NCCR North-South programme is concerned. It also contained an evaluation of the workshop that illuminated many positive aspects as well as major challenges for the future. These related mainly to the importance of making this programme a common undertaking of all partners. This implies time and platforms for bilateral and multilateral discussions at the topical as well as conceptual levels, access to and distribution of information, and the deliberate strengthening of communication channels in all directions.

14.2 The NCCR North-South research matrix

After the Grindelwald Conference, the matrix of involvement by each of the eight Individual Projects in each of the eight JACS was further discussed and negotiated, resulting in the collaborative network presented in Figure 1. The ninth region, the JACS Alps, was not covered at that stage because of its special function within the NCCR North-South.

Fig. 1
Involvement of
Individual Projects
(IPs) in Joint Areas
of Case Studies
(JACS), as agreed
by the Board of the
NCCR North-South
in early 2002. Not
shown is the JACS
Alps region.
Source:
NCCR North-South
2002



According to Figure 1, each IP would have a leading function in one JACS, i.e. be responsible for establishing a Regional Coordination Office (RCO), developing formal agreements for research partnerships, identifying institutional partners and managing the financial resources allocated to the JACS regions (squares in Figure 1). Certain IPs would have a major involvement (large circles in Figure 1) if they had at least one researcher working on a PhD and/or several researchers at the MSc level in the JACS region, coordi-

nated by another IP. Finally, the small circles in Figure 1 denote minor involvement, e.g. by providing methodological assistance, supervisory functions for PhD and MSc candidates, or supporting training in the region. A summary of research themes identified by 30 June 2003 in each JACS region is listed in the boxes in section 14.3. Figure 1 shows that there was no attempt to have the matrix fully covered, as a focus on comparative advantages was seen as more beneficial.

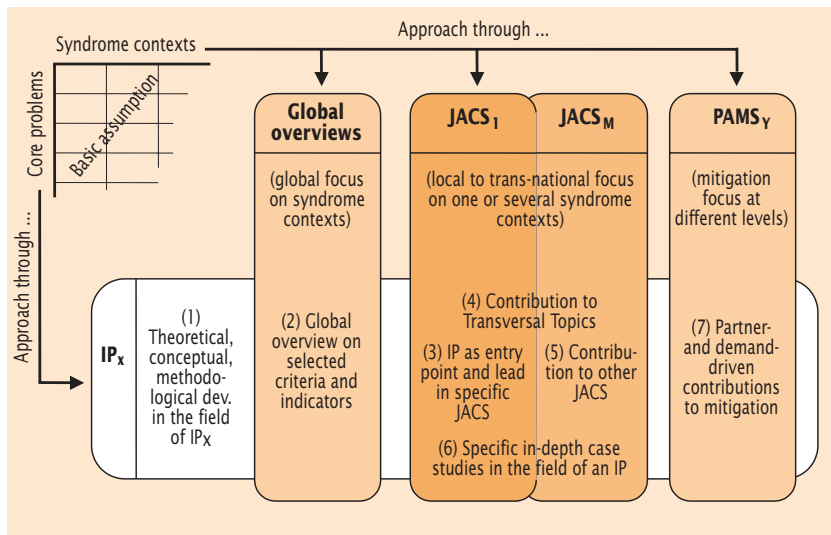


Fig. 2
The framework of
syndrome mitiga-
tion research pur-
sued by the NCCR
North-South.

Figure 2 gives an overview of the research approach and the different research directions taken by the programme, emphasising the need to find an iterative and pragmatic balance between disciplines and the case studies they undertake, as well as integrative approaches and steps. While the involvement of IPs in the different JACS constitutes the main focus of the NCCR North-South approach, each IP was also invited to contribute to the overall scientific concept and methodology, as well as to theoretical, conceptual and methodological development in its own disciplinary realm. This is shown as a “horizontal” activity (1) in Figure 2. Under the guidance of IP1, a scientific forum was established to review, refine and amend the syndrome concept and the concept of syndrome mitigation, in order to increase their general relevance and suitability in forming an integrative conceptual

framework for the NCCR North-South. The forum also pays specific attention to relations among, and integration of, key concepts developed and applied in IPs 2 through 8 (sustainable livelihood, gender, governance, social learning, sustainable resource management, risk and vulnerability). In addition, it promotes, evaluates and compiles concrete transdisciplinary strategies that make it possible to increase the permeability of scientific disciplines and societal categories. This will strengthen the NCCR North-South as a centre of applied transdisciplinarity, while also making it possible to deduce principles from and for practical experience. Some examples of research that contribute to the overall framework have been mentioned in Annual Report No. 2 of 31 March 2003 and are listed here (see Box).

A further integrative element shown in Figure 2 is the global positioning of syndrome contexts and other general issues. In this respect, Global Overviews are being compiled of the syndrome contexts and core problems tackled within the NCCR North-South, taking account of their spatial and temporal variables, in order to evaluate the acuteness of context-specific clusters of problems and assess the relevance of cases and contexts studied within the programme. This is shown in Figure 2 as a specific approach (2) of each IP.

The research themes pursued in each JACS have a local to transnational focus on one or several syndrome contexts, forming the bulk of activities of the NCCR North-South. The lead IP in its specific JACS will naturally have

Examples of general research themes valid for all contexts:

- Indicator-based syndrome assessment and approaches to sustainable development (so-called 'Global Overviews' – IP1 in collaboration with all other IPs)
- Social learning and negotiation platforms in natural resource management (IP1)
- Global Overviews of natural resource degradation (IP2)
- Global Overviews of environmental sanitation and urban agriculture (IP3)
- Negotiated management of forest commons (IP8)

Source:
NCCR North-
South, 2003

a major part of ‘its’ studies located in its ‘own’ JACS (see (3) in Figure 2). But some research themes are also designed to contribute to Transversal Topics (4) and other JACS (5), while others are more in-depth studies that primarily advance the development of disciplinary knowledge (6).

Finally, concrete actions focusing on syndrome mitigation would be compiled through “Partnership Actions for Mitigating Syndromes” (PAMS), proposed by partners and institutions in JACS regions, in collaboration with the programme (see (7) in Figure 2). Experiences with PAMS will be generalised, with a view to assisting stakeholders and development agencies in the formulation, planning and implementation of projects and policies. Principles and instruments of syndrome mitigation should be tested and refined by implementing concrete mitigation and planning processes, such as multi-level and multi-stakeholder negotiations, expert systems, spatial information systems and enhancement of social learning processes, all with a view to promoting practical pathways of integrated syndrome mitigation.

14.3 Overview of research projects in the JACS regions

Given the great emphasis on research partnership projects in the JACS regions, this final section will provide an overview of research projects in each JACS. The boxes below show research themes as identified and/or planned until 30 June 2003, the mid-term of the four-year first phase of the NCCR North-South. By this point, each IP had developed nearly all of its PhD and post-doc research proposals, which made it possible to present and discuss them for each JACS in summary fashion.

In the JACS West Africa, most research projects focus on issues of human health and well-being, the scientific realm covered by IP4 (see Box, p. 432). Nevertheless, three other IPs have become involved in the region, IP3 and IP5 in the urban and peri-urban context, and IP6 in the semi-arid context. The two prevailing syndrome contexts are both well addressed, and the level of critical mass for research is likely to be reached for the main topic addressed. IP1 provides methodological support through its Scientific Forum.

Major research themes in the JACS West Africa

Urban and peri-urban context:

- Exclusion, vulnerability, poverty among women, and AIDS (IP4)
- Urban social networks and illness (IP4)
- Vulnerability and risks of school children in relation to AIDS (IP4)
- Urban dynamics and health risk management (IP4)
- Urban observatories for sustainable management (IP5)
- Urban malaria transmission and vector dynamics (IP4)
- Epidemiological patterns and perceived needs for health interventions (IP4)
- Urban health risk assessment and spatial methodologies (IP4)
- Sanitary risks in rapidly growing urban settings (IP4)
- Management of solid and liquid wastes in urban settings (IP4)
- Management of sludges from on-site sanitation systems (IP3)
- Treatment of potential Endocrine Disrupting Chemicals (EDC) in water (IP4)
- Social dynamics and management of reproductive health (IP4)
- Experiences and practices related to febrile illnesses (IP4)

Semi-arid context:

- Molecular epidemiology of tuberculosis (IP4)
- Institutions of common property resource management (IP6)
- Health, vulnerability and tuberculosis in Sahelian communities (IP4)
- Human and animal health in nomadic pastoralist communities (IP4)

Source:
NCCR North-South
2002

The JACS East Africa is closely related to IP1, which deals with the conceptual framework and methodologies throughout the NCCR North-South. In this sense, the JACS East Africa has a leading role in developing a JACS approach that aims to build a bridge between specific case studies and integrative approaches at the level of syndrome assessment, and even more at the level of syndrome mitigation. The JACS East Africa is therefore heavily based on a think tank of senior scholars from the region, and will develop a common research framework and database that allows for multi-level and multi-stakeholder approaches. Due to its position in the overall NCCR North-South, the JACS East Africa attempts to cover all three syndrome contexts addressed by the programme. However, given the priorities set in the

JACS workshop, primary emphasis at present is being put on the highland-lowland and the semi-arid contexts. Most post-doc and PhD research projects established to date are thus concentrating on one of the two contexts, while explicitly addressing the links to the other context, e.g. in the framework of basin-wide approaches that link mountains and highlands with semi-arid lowlands. In addition, the studies address specific methodological and conceptual issues related to syndrome assessment and syndrome mitigation that are hypothetically of relevance to the overall NCCR North-South, and that can therefore be integrated into the Scientific Forum mentioned above. This is not only valid for the contributions of IP1 but also for the other IPs involved.

Major research themes in the JACS East Africa

Highland-lowland context:

- River water abstraction and allocation modelling (IP2)
- Water use and primary productivity for smallholders (IP2)
- The role of IT in developing negotiation platforms in highland-lowland contexts (IP1)
- Institutional capacities in dealing with management, planning and conflict resolution (IP1)
- Local governance of forests (IP8)

Semi-arid context:

- Common property resources and power relations in resource-rich islands in semi-arid contexts (two projects by IP6)
- Assessment of capacities and constraints in syndrome mitigation at multiple levels (IP1)
- Potentials and limitations of Information Technology and GIS in syndrome mitigation (IP1)
- Livelihoods, vulnerability and natural resource use (two projects by IP1)
- Drought risk assessment and modelling (IP1)

Urban and peri-urban context:

- A participatory urban observatory as a tool for multi-level syndrome mitigation (IP1)
- Multi-level governance of urban marginality (IP8)

Source:
NCCR North-South

2002

Themes for the JACS Horn of Africa have been covered as planned by the programme. IP7 focuses on resource-related conflicts and pastoralist livelihoods at the interface between nomadic and settled agriculture in semi-arid contexts, and on national and international water policies and their effects on local conflict and resource management strategies in highland-lowland contexts. IP2, on the other hand, focuses predominantly on the highlands and on sedentary farming in highland-lowland contexts, the latter including the vast majority of the population in Ethiopia, where more than 60 million people are engaged mainly in subsistence agriculture in the highlands. Methodological inputs by IP1 and IP4 have also been initiated. All the themes chosen are very important and relevant to the region, not only in Ethiopia, but also in neighbouring countries such as Sudan, Eritrea and the area that includes the former Somalia.

Major research themes in the JACS Horn of Africa

Highland-lowland context:

- National and international water policies and local resource and conflict management (IP7)
- Land degradation and management options (IP2)
- Land transformation and opportunities for sustainable land management (IP2)
- Spatio-temporal perspectives on soil resources (IP2)
- A multi-level stakeholder approach for mitigating land degradation (IP2)
- Negotiated management of nature protection and resource management (IP2 and IP7)

Semi-arid context:

- Policies and capacities of states in dealing with environmental conflicts (IP7)
- Destruction of indigenous institutions and transformation of pastoral conflicts (IP7)
- Mitigating violent resource use conflicts in pastoral areas (IP7)

Source:
NCCR North-South
2002

Major research themes in the JACS Central Asia

Highland-lowland context:

- Legal and institutional framework for sustainable mountain development (IP2)
- Knowledge generation for sustainable mountain development (IP2)
- Livelihoods in transition: strategies for coping with processes of multiple change (IP2 and IP6)
- Impact of land use on land resources in a watershed (IP2)
- Land use, climate and river runoff interactions in a watershed (IP2)
- Sustainable water management in an intermediate zone (IP2)
- Soil and water management in a semi-arid highland-lowland context (IP2)

Semi-arid context:

- Appraisal of conflict transformation in water resource management (IP7)
- Mitigation strategies for transforming freshwater conflicts (IP7)
- Land degradation and conservation in semi-arid landscapes (IP2)

Source:
NCCR North-South
2002

In the JACS Central Asia, close involvement between IP2 and IP7 can be observed, similar to that in the JACS Horn of Africa. Methodological support from IP6 has been secured, and IP4 has also been invited to join in; hence the programme is operating as planned. Given the great emphasis on problems of transition, which also has major consequences for the economic sphere, this challenge appears to be insufficiently covered by the research themes selected. However, great dependency on natural resources such as water, vegetation, soil, livestock and wildlife justifies initial study of these interfaces. In a later phase, however, economic considerations will have to be given greater emphasis. Finally, IP1 provides methodological support through its Scientific Forum.

Major research themes in the JACS South Asia

Urban and peri-urban context:

- Livelihoods of marginal communities in peri-urban areas (IP6)
- Gender, governance and urban environment (IP8)
- International labour migration and rural livelihoods (IP6)

Highland-lowland context:

- Impact of participation and devolution of power on natural resource utilisation and livelihood security (IP6)
- Approaches to mitigation of environmental conflicts (IP7)
- State policies and environmental conflicts between indigenous populations and settlers (IP7)
- Settler challenges: migration, ethnicity and collective action (IP7)
- The effects of nature conservation and cultural heritage on rural livelihoods (IP6)
- Coping strategies of rural households for dealing with the threats and opportunities of economic globalisation and state decentralisation (IP6)
- International labour migration and rural livelihoods (IP6)
- Economic growth and poverty reduction at the macro level (IP6)

Source:
NCCR North-South
2002

IP6 – itself an interdisciplinary research team – has invested much of its resources in the JACS South Asia. Hence the programme focuses on two syndrome contexts and a macro-economic study with several PhD candidates. In addition, IP7 and IP8 have strong stakes, and IP1 provides methodological support through its Scientific Forum. Given the extended area of involvement in several countries within this JACS, the emphasis of IP6 is by no means too intense. Natural resource management issues have been prominently built into the JACS approach, given the great dependency of poor segments of the population on these resources.

In the JACS South East Asia, IP3 has invested much of its resources in strengthening local research institutions and conducting research in the urban and peri-urban context. By 30 June 2003, IP1 had ongoing activities in the highland-lowland context, while the involvement of IP4 and IP5 were still at the planning stage. Methodological support by IP2 is assured, while IP7 and

Major research themes in the JACS South East Asia

Urban and peri-urban context:

- Alternative sanitation systems for urban and peri-urban areas (IP3)
- Potential and limitations of decentralised wastewater management (IP3)
- Application of Material Flux Analysis for strategic sanitation planning (IP3)
- Application of the Household-Centred Environmental Sanitation (HCES) Approach (IP3)
- Optimisation of water pollution control measures (IP3 and IP2)

Highland-lowland context:

- Spatial poverty analysis (IP1)
- Patterns of land cover change (IP1)

Source:
NCCR North-South
2002

IP8 will have to reconsider their planning for this JACS (see Figure 1). In addition, IP1 provides methodological support through its Scientific Forum.

The JACS Central America and the Caribbean is the main region of IP5, and there have not yet been any other PhD studies by other IPs. IP3 will have to reconsider its planning of a PhD or post-doc for this JACS, while the methodological inputs by IP4 and IP8 will have to be reconsidered as well. IP1 provides methodological support through its Scientific Forum, and IP2 is involved in the co-supervision of one PhD candidate.

Major research themes in the JACS Central America and the Caribbean

Urban and peri-urban context:

- Intermediate cities and globalisation (IP5)
- Social segregation and space (IP5)
- Urban security and insecurity and public space (IP5)
- Borderland urban intermediation (IP5)
- Benefit sharing mechanism between urban and rural municipalities (IP5)

Highland-lowland context:

- Land use change and urban-rural interactions (IP5/IP2)

Source:
NCCR North-South
2002

Major research themes in the JACS South America

Urban and peri-urban context:

- Governance of urban environmental risks (IP8)
- Social movements, citizenship and the management of water services (IP8)

Highland-lowland context:

- Regional governance of biodiversity (IP8)
- Indigenous knowledge and biodiversity conservation (IP8)
- Local governance of forests and citizenship (IP8)
- Communal management of resources and public policies (IP8)
- The interface between state and civil society in conservation management (IP1)
- Indigenous farmers' perceptions of the environment and their relation to the concept of ecosystem biodiversity (IP1 and IP2)
- Land use change and urban-rural interactions (IP5/IP2)

Source:

NCCR North-South
2002

In the JACS South America, mainly studies by IP8 and by IP1 and IP2 are being implemented, while PhD or post-doc studies have not yet been initiated by IP3 and IP5. Here the focus is strongly directed towards highland-lowland contexts. In addition, IP1 provides methodological support through its Scientific Forum.

Last but not least, in the JACS Alps, the NCCR North-South benefited from activities not directly funded by the programme, but associated with it through other SNSF programmes as well as other IP1 projects. In addition, the first Integrated Training Course (ITC) was held in Aeschiried, Switzerland, i.e. in the JACS Alps, from 9–20 September 2002. The objectives of the ITC were to train PhD candidates in the overall concept and approach of the NCCR North-South, making them aware of the variety of research conducted, positioning their individual research within the framework of the NCCR North-South, building networks and bilateral links, receiving practical assistance and elaborated tools to conduct quality research, and developing competence in inter- and transdisciplinary research.

Major research themes in the JACS Alps

Highland-lowland context:

- Landscape and project evaluation (NRP 48)
- Management planning process for the “Jungfrau-Aletsch-Bietschhorn” World Natural Heritage Site (IP1)

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